

ABSTRACT

**SEMICONDUCTOR MULTI-PACKAGE MODULE HAVING INVERTED SECOND PACKAGE
STACKED OVER DIE-UP FLIP-CHIP BALL GRID ARRAY (BGA) PACKAGE**

A semiconductor multi-package module has stacked lower and upper packages, each of which includes a die attached to a substrate, in which the second package is inverted, and in which the first and second substrates are interconnected by wire bonding, and in which the first package includes a flip-chip ball grid array package having a flip-chip in a die-down configuration. Also, a method for making a semiconductor multi-package module, by providing a lower molded package including a lower substrate and a flip-chip in a die-down configuration, affixing an upper molded package including an upper substrate in inverted orientation onto the upper surface of the lower package, and forming z-interconnects between the upper and lower substrates.